GOVERNMENT OF INDIA
COAL
LOK SABHA

STARRED QUESTION NO:238
ANSWERED ON:14.03.2007
RECOMMENDATIONS OF THE INDIAN SCIENCE CONGRESS
Oram Shri Jual

Will the Minister of COAL be pleased to state:

(a) whether the Indian Science Congress 2007 has given any recommendations regarding deregulation of prices of coal and modernisation of coalfields;

(b) if so, the details thereof; and

(c) the steps taken by the Government to implement those recommendations?

Answer

MINISTER OF STATE IN THE MINISTRY OF COAL (DR. DASARI NARAYANA RAO)

(a) to (c): A statement is laid on the Table of the House.

Statement referred to in parts (a) to (c) of the reply to Lok Sabha Starred Question No.238 for answer on 14.03.2007.

(a) to (c): Recommendations of the Indian Science Congress 2007 have not yet been published. However, with the promulgation of the Colliery Control Order, 2000, the coal pricing was fully deregulated from 01.01.2000 and Coal Companies are free to fix the price of coal.

Modernisation of coalfields is a continuous process for improving safety and productivity of mines. Coal companies are planning new mines with mechanized workings both in underground and opencast mines wherever possible for increased productivity and safety. Mines safety equipment and facilities including rescue stations are also being modernized wherever necessary.

18TH POSITION

NOTE FOR THE SUPPLEMENTARIES FOR LOK SABHA STARRED QUESTION NO.238 ASKED BY SHRI JUAL ORAM FOR ANSWER ON 14.03.2007 REGARDING RECOMMENDATIONS OF THE INDIAN SCIENCE CONGRESS.

1. When and where the last Indian Science Congress was held?

The Indian Science Congress was held during 3-7 January, 2007 at Chidambaram, Tamil Nadu. Annamalai University was hosting the Science Congress. This Science Congress is held every year during the first week of January.

2. What was the theme of the discussion?

The Theme of the discussion was Planet Earth.

3. When and where was the 2006 International Coal Congress held?

International Coal Congress 2006 was held during 11-13 December, 2006 at New Delhi.

Brief of Coal Congress 2006.

International Energy scenario has undergone exciting and challenging shifts during the last three decades; and currently coal is finding a new meaning under the "Energy Security" regime in different geographic regions of the world. Due to hardening of international coal prices all the coal mining countries are making increasing investments to expand production and introducing more efficient mining

technologies and clean coal technologies for utilization. As the major demand is to increase production in coal producing and utilizing countries, it is projected that the coal will regain its apex position in energy fuel supplies. The emerging technology options aim at promoting mitigative actions for environmental impacts due to coal combustion. Volatility in crude oil prices and increasing confidence in clean coal technologies will open out new options and avenues for energy security in emerging economies and developing countries at an affordable price. To keep this momentum moving the global interactions like the International Coal Congress 2006 has a crucial role.

2. Specific recommendations, aimed at Sustainable Development of Coal for Energy Security emerged at the Coal Congress 2006 conference.

Recommendations:

1. Current Status and Future Prospects of Coal Mining Industry:-

Eight Country Papers were presented on coal mining industry of India, USA, Australia, Poland, China and European Union. In all these countries the coal mining has an upswing due to global rapid industrial development as well as for satisfying the requirements of'Energy Security'. Due to hardening of the international coal prices all the coal mining countries are making plans to expand their production by introducing more efficient mining technologies. It was also noted that all these countries see rising coal demand for at least next few decade. All the country papers clearly emphasized on the mitigative actions for the environmental impact that coal burning is likely to cause. Carbon capture and storage, carbon sequestration, application of clean coal technologies and special emphasis on improvement of thermal efficiency of coal combustion, recovery of coal bed methane, surface and underground gasification with CCS has been found to be making in-roads in the energy sector and are being vigorously pursued as supplement to coal. Due to extremely volatile oil market and heavy dependence on imports of oil many countries are pursuing conversion of coal to oil for energy security.

2. Policy Framework for Sustainable Development of Indian Coal for Energy Security:-

Eight presentations were made by eminent personalities hailing from policy makers from the Government, practicing senior managers from the industry both public and private and from the academia.

The following salient points emerged:

Opening up of the coal sector for private investment completely alongwith establishing a Coal Regulatory Authority.

Realistic assessment of coal resources keeping mineability and viability as the yard stick.

Accelerated coal exploration including induction of private and state government sector to find new coal reserves to meet the rising demand of coal.

Coal prices to be linked with international prices based on GCV.

Free marketing of coal through e-auction and through market driven prices and control through legally enforceable long- term fuel supply agreement.

Since bulk of the coal capacity Addition is to come from Coal India Ltd, the company must be given all support.

All clearances for opening new coal projects must be made easier and faster.

Re-settlement and re-habilitation policies must be made uniformly acceptable by the project affected people.

Policy framework must encourage underground mining acceleration;

burden of underground mining should be loaded on opencast mining to make it economically acceptable.

Emphasis has to be given on suitable modern mining technology and on the training and re-training to develop the skills of the mine workers as well as executives.

The process of allocation of coal blocks for captive mining to be made faster and simpler. All good blocks need not be reserved for Coal India Ltd.

To improve the working efficiency and viability of coal mining there is a need to amend and relax the provisions of Contract Regulation and Abolition Act, to enable mining companies to offer mining services on contract.

Fresh look at existing coal linkages transport logistics and freight structure to provide a level playing field to the indigenous coal vis-Ã - vis imported coal.

Coal sectors should be given the status of "Infrastructure Industry" like the industries using coal.

For enhancing the production quickly large sized equipments shall be used, for which manufacturing industry alongwith their servicing capabilities needs to be build up.

3. Recent Trends in Mining Technology:-

Six presentations were made on underground and opencast technologies, three from India, one each from Poland, China and Australia.

The following salient points emerged:

As underground coal mining is essential for long-term sustainability of coal production, foreign authors recommended that the future system of underground mining has to be pillar and chamber system and long-wall system. The coal mining industry should aspire 2 working levels and 3-4 highly efficient and high production districts in one mine. It was also recommended that roof bolting and steel arches will be the system of support.

In China, which is the largest underground coal producer, has attained present position by adoption of a variety of long-wall mining methods with modification suitable the local conditions.

As bulk of the capacity addition for enhanced coal production will be opencast mine, the system shall have high capacity large equipment for drilling, loading and conveying (shovel dumper combination and draglines), in-pit crushing. These large capacity mines will also be using

surface miners and high capacity bucket wheel excavators. Wherever applicable high wall and punch wall mining shall be introduced.

The importance of the establishment of a technology institute was greatly emphasized for finding suitable technology for the given areas, as well training the work force for enhanced skills.

4. Technological Development in Coal Utilization:-

Eight papers were presented on the subject of integrated coal utilization policy, coal beneficiation, clean coal technology including fluidized bed combustion, fly ash utilization and Carbon capture and storage (CCS). Contributions were from coal producers, power generators, and power equipment and research institutes.

As far as coal utilization is concerned the concept of integrated coal utilization was proposed covering the following salient points:

Location of major coal based power plants (and other industries) from coal supply point.

Rationalization of supply sources and transportation routes for existing users and import of coal for coastal locations.

Rational pricing of coal, clean coal technologies in the entire coal-energy chain.

Institutional and regulatory mechanism for the coal industry.

Sustainable development enhanced recovery of coal from the available resources.

All raw coal being mined should be beneficiated by choosing suitable washing processes

Thrust research areas proposed are: oxy fuel combustion, underground coal gasification for utilization in power generation and accelerated development of supercritical coal fired plants.

The Current coal combustion efficiency being on the lower side of the international standard, it is necessary that the combustion equipment manufacturers must ensure to produce larger equipment of higher efficiency.

Carbon dioxide capture and geological storage will be an important technology for mitigating the risk of dangerous climate change due to enhanced burning of coal. Immediate focus should be given to bring in this technology to Indian Power generation industry.

As increasing amount of coal beneficiation is likely to generate the large quantity of high ash middling their combustion in FBC boilers should be made mandatory.

Fly ash generated through process of thermal power generation should be seen as a resource rather than a pollutant. With increased

combustion of high ash coal the generation of fly ash will also increase.

Fly ash utilization technologies have been well developed and their application should be made enforceable.

5. Coal Exploration:-

The following salient points emerged:

Demand for Coal will grow three times in next two decades. Urgent need is felt for increasing inventory of Proved Reserves for augmenting production based future mining.

Thrust is required both for shallow opencast mining as well as deeper underground mining resources.

Current Exploration capacities can at best meet requirement pf current Coal Producers in the public domain. Additional capacities have to be mobilized for meeting the requirements of the captive producers coming on the scene.

Coal Exploration, till now restricted to national agencies, needs to be broad based through induction of professional exploration capabilities both from within the country and overseas.

Some of the major large scale regional and detailed prospecting jobs could be put on Project mode as Special Purpose Vehicles (SPV).

For proving more reserves with speed, accuracy and less cost, it is essential to adopt modern technologies in surveying, mapping, drilling, geophysical borehole logging, laboratory facilities, application of information technology, etc.

6. Non-Conventional Coal Based Sources of Energy:-

The following salient points emerged:

Four papers were presented in this session covering the subjects of surface and underground coal gasification, coal bed methane

and prospect of oil from coal.

The deep-seated coal / lignite deposits in the western parts of the country which are not amenable to viable mining need to be utilized by in situ underground coal gasification. The matter is under discussion for many years. It is necessary for the government to encourage the industry to take concrete steps on the ground. Establishing a pilot

scale project immediately at the suitable location. Efficiency improvement in surface coal gasification with CCS needs to be pursued very vigorously.

In the last decade very positive concrete steps have been undertaken for exploitation of virgin coal area for coal bed methane and 26 blocks have been allotted. Exploitation of these blocks needs to be closely monitored to have accelerated progress. Recovery of CBM is yet to take off in working mine is yet to gain any momentum, all efforts need to be made for the recovery of CBM for use as a clean fuel as

well as reduction of its impact on climate change.

Commercial ventures in coal liquefaction will improve national energy security by lesser dependence on foreign oil as well as improved balance of trade. Since technology development is getting well established to manufacture transportation fuels from coal, it would be a wise policy to start a national programme on coal to oil conversion.

7. Mining Equipment Development:-

Four presentations were made on the development of the equipment and coal preparation:

The following salient points were emerged:

There is a need for development of higher sized equipment, for opencast mining particularly in the area of drills, shovel, dumpers, and draglines.

Technology of continuous mining in the form of bucket wheel excavators, surface miners and in-pit crushing and conveying should be extended to more mines.

For medium to low capacity of coal washeries, where ash reduction is limited to 7% to 9% and dry jigging technology equipment should be manufactured indigenously.

Coal slurry which hitherto is being dumped causing pollution, should be processed by use of high efficiency filters / floatation process to recover concentrated coal mines, for which close circuit equipment should be made available by the industry.

Manufacturers of spares as well as back-up services for overhaul and

maintenance equipment need to be strongly augmented to cut down the down time.

8. Expanding coal markets and infrastructure:-

Six presentations were made covering rail transport, port infrastructure, shipping and acquisition of coal resources abroad.

The following salient points emerged:

Creation of separate freight corridors (East& West) as means of capacity enhancement initiated by the Indian Railways for Golden Quadrilateral and its diagonals must be pursued vigorously

Demand for imported coal movement from ports to consumption centers is increasing. Ports infrastructure is yet to gear up in meeting the future needs of power houses. Port operations would need streamlining and focused attention to meet the need.

Speeding of coal trains by way of extended runs, usage of high capacity locomotives, clear path runs etc will add to more availability of rolling stock. All Power Utilities be requested to improve their handling capacities to improve wagon turn-around.

Seeing impending high growth of steel production, India would continue to import coking coal to bridge quantitative and qualitative gap and as such port infrastructure must be taken up on a priority.

Keeping coal security angle in mind it is necessary to acquire coal prospects abroad. And in this respect incorporation of Coal Videsh as subsidiary of Coal India Ltd should be expedited.

Producer, consumer and transporters should look at the fluctuating shipping freight rate and enter into forward freight agreements to cover various risks, which influence cargo owner, ship owner and operator.

9. Environment and Social Issues:-

The following salient points emerged:

Eight presentations were made in this session, covering this very critical sector forming the theme of the Congress of sustainable development. The areas covered were policy framework, making coal mining environmental and people friendly.

Although substantial improvement in coal industry image, as environmentally conscious entity, has been made since enactment of protection laws; further efforts in view of increased production are needed to protect concerns over its environmental and social impacts on health, land, water, air, fauna and flora and other aspects of society particularly in the area of resettlement and rehabilitation.

Rapid clearances are needed.

Uniform R & R policies are needed.

Re-forestation cost to be kept within acceptable limits of the coal industry.

Implementation of R & R packages to be made more effective by having a team with representative from mining company / PAFs, State Government and NGO's etc

10. Human Resources, R & D and Safety:-

Four presentations were made on the above subject

The following salient points emerged:

In view of the increased demand of skilled personnel particularly executives, re-orientation of the mining courses, recruitment process

and operations of the industries are very much the need. Training and re-training of the personnel has also to receive focus.

From a safety and health point of view, objective of zero accident rates has to be perused vigorously for which the role of the safety organization has to be enhanced, particularly in the area of roof control, blasting and ventilation. Control of professional hazardous diseases has to be controlled by adequate precaution and timely treatment.

Current status of coal sector R & D is rather dismal. Efforts have to be accelerated in all fields of mining activities-particularly coal mining technologies, roof support system, ventilation and health monitoring etc.

Current training facilities in the coal sector, though significant for the workers and the executives, need to be refined to become more effective.

11. General Recommendations:-

• Coal India Ltd is the largest Coal producing company of the world. However, it has to be made world class in standards in operations as well

• management. Coal India should be restructured and should be reorganized in same pattern of Steel Authority of India

(SAIL) as unitary

• company, with each subsidiaries unit to be headed by the managing director and the functional executive. Independent Directors should also be appointed. This will bring in better cohesion in management and effective operation in the company.

Coal India should form joint ventures company with large and reputed foreign coal processing company in order to bring in latest technical skills and methods and also financial investments. Coal India should be given the Nav Ratna Status. The 10-20 % share of Coal India should be offered to the CIL employee / Public.

• CMPDI should be modernized at par with International standard and should function in close collaboration with World bodies like World Coal Institute, World Energy Council, International Energy Agency, World Steel Institute and National Institutes like CMRI, ISM, IIT Kharagpur and Institute of Technology, BHU.

• Indian School Coal Management (IICM) needs to be upgraded as Deemed University and should function as Open University for all persons working in coal industry in India. The high level of management trainee should be conducted at IICM and middle/lower level management should be imparted by the regional management institutes located in various subsidiaries company.

Similarly technical training should be supervised CMPDI for higher level managerial executive and technical training to middle and lower level by the regional institutes of CMPDI.

prices of coal

Coal prices have been deregulated with effect from 1st January 2000 and coal companies are empowered to fix the coal prices. However, the Energy Coordination Committee headed by Prime Minister has asked the Planning Commission prepare a transition path in order to operationalize the coal pricing mechanism. Planning Commission has initiated action on this point.

EXTRA Modernization is a continuous process for improving safety and productivity of mines. For modernization of coal mines, coal companies are planning new mines with mechanized workings particularly adopting mass production systems for underground mines for improved safety and productivity wherever feasible and heavy earth moving machinery in opencast mines. Existing manual workings in underground mines are also being mechanized wherever feasible in order to avoid manual loading of coal. All the necessary infrastructural facilities for coal handling/sizing and movement are also being created through establishing coal handling plants and rapid loading systems particularly in major projects. Computerized truck dispatch systems for monitoring movement. of HEMM are in place in a number of major projects. Where ever necessary mines safety equipment and facilities including rescue

stations are also being modernized.